139-1.

A-L
TRADE MARK

A=L "Imperial"

Electrical Installations

ALLEN=LIVERSIDGE, LTD.

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API INTERNATIONAL

CCA

Catalogue E. 8.

A-L
TRADE MARK

A=L "Imperial"

Electrical Installations

for

Lighting, Heating, Pumping,

Etc., Etc.

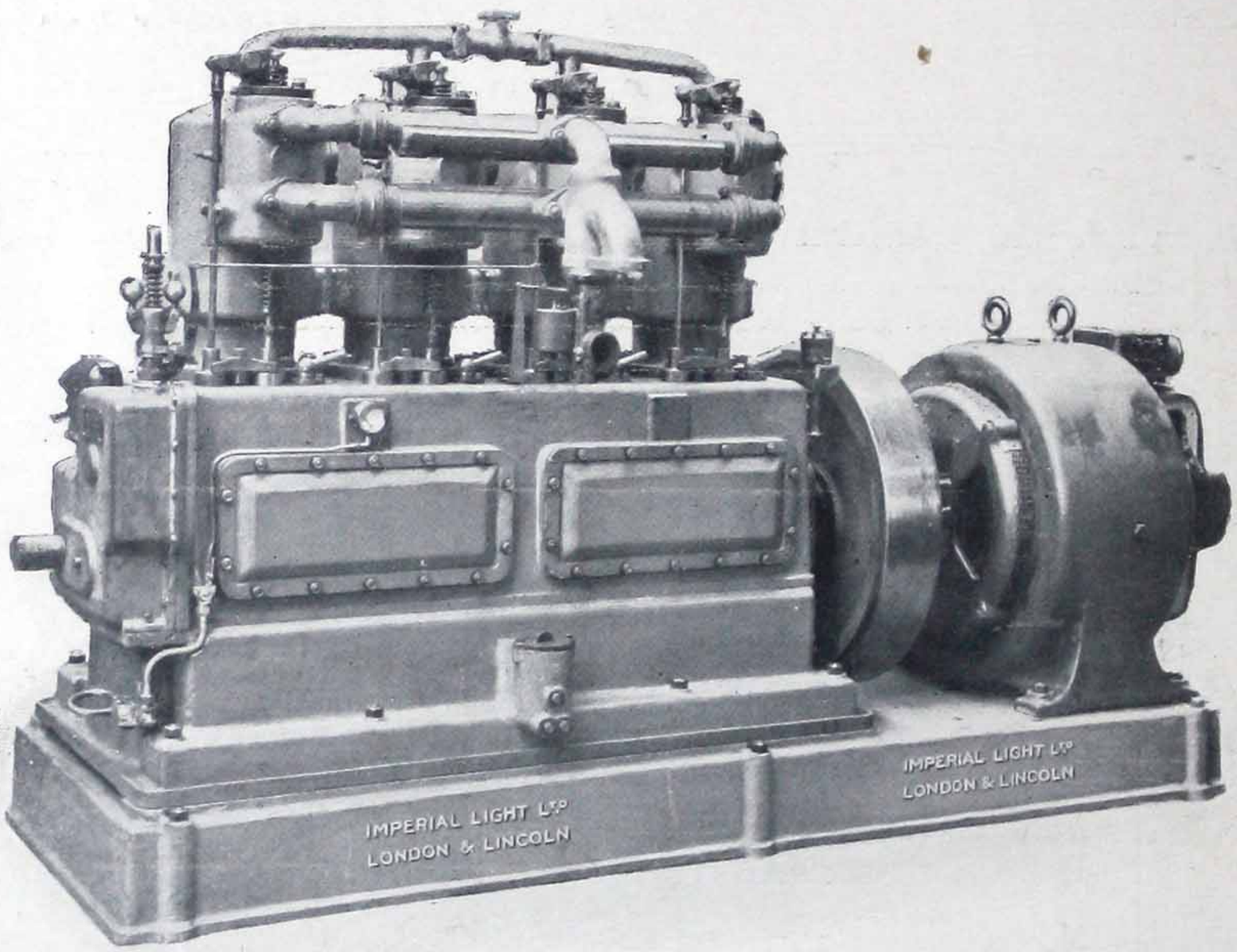
An Installation of 200 lights. In Hampshire.

Allen=Liversidge Ltd.

Installation Department,

Offices and Showrooms: 123, Victoria Street,
Westminster, S.W.1.

Telegrams: "EDIBRAC, PHONE, LONDON."
Telephone: VICTORIA 3540 (3 lines) Extensions 5.



60 B.H.P. Engine, 4-Cylinder, Direct Coupled to 30 Kilowatt Generator.

A=L "Imperial"

Electrical Installations

LIGHTING AND HEATING INSTALLATIONS—or for that matter those which also combine the means of cooking and power for mechanical or other purposes—intimately affect the comfort of the home. It therefore behoves every potential user to select with the greatest care both the plant and those to whom the installation work is entrusted. A good plant well installed and supplied with fittings of taste and character is an undisguised blessing. Any other kind is not worth the trouble of installation.

In the selection of a plant, whether large or small, many factors have to be considered: the average amount of work required of it; whether the demands upon it are likely to be generally uniform, or small for a period with an occasional heavy load (as, for instance, where entertaining is done periodically on a large scale); what auxiliary apparatus is required; what accommodation there is for the plant, and how silence may be ensured; the comparative cost of fuel in the locality—paraffin, benzine, petrol, town gas, etc.; the proper size of storage batteries; whether an automatic, semi-automatic or non-automatic plant is best for the purposes in view. These and many other points require expert consideration, and in most of them the householder requires expert help and guidance.

This Company has the advantage of over twenty-seven years' experience in installation work. During that period many hundreds of country houses, public buildings, churches, schools and University colleges have been fitted by us with lighting, heating and other plants. But although the Company has a well-merited reputation for the excellence of its work among families of position and wealth, and among public authorities in all parts of Great Britain, the same individual attention is given to each and every undertaking, whether it be for a large country house where plant and fittings cost hundreds of pounds or for a small riverside bungalow.

Allen=Liversidge Ltd.

A=L "Imperial"

Electrical Installations

In every case, too, the same careful methods are employed. In wiring, for example, the disturbance of a household by the presence of workpeople engaged in wiring is reduced to a minimum, while the work is swiftly done and in such a way that there is no interference with mural decorations of any kind.

Fittings are a matter of personal taste, and in our showrooms at 123, Victoria Street (near Army and Navy Stores), will be found many varieties of design suitable for every type of room and for every purpose. These include lighting fittings, cooking and heating apparatus, electric vacuum cleaners, etc. The aim of the Company throughout its years of activity in installation work has always been the maintenance of "the best" in all branches of its undertakings. A tribute to the outstanding excellence of A-L "IMPERIAL" Plants is the fact that our business has been built up almost entirely through personal recommendation by one satisfied client to another.

The principal parts of an Electrical Installation are :—

The Driving Power, Dynamo, Switchboard, Accumulators, Main and Distributing Conductors, and the Fittings, such as Brackets, Pendants, Table and Floor Standards, Irons, Cooking Apparatus, etc.

Where water power is available the driving power may be a Turbine. Generally, however, the Power is an Oil Engine which may drive the Dynamo by means of a belt, or where space is limited the Engine and Dynamo are mounted on one combined cast iron bed plate.

In designing an Electrical set it is essential that the Engine, in order to minimise wear and tear, should be run at the lowest possible speed, consistent with the requirements called for. Consequently each size of Installation must be treated individually.

The "Imperial" Engine is designed to give the maximum output with the lowest possible consumption of fuel and the minimum wear on working parts, thereby reducing maintenance charges to a minimum.

The Company are always ready to advise on the best size of plant and to give any assistance to enquirers. A staff of competent engineers is available for this purpose at all times.

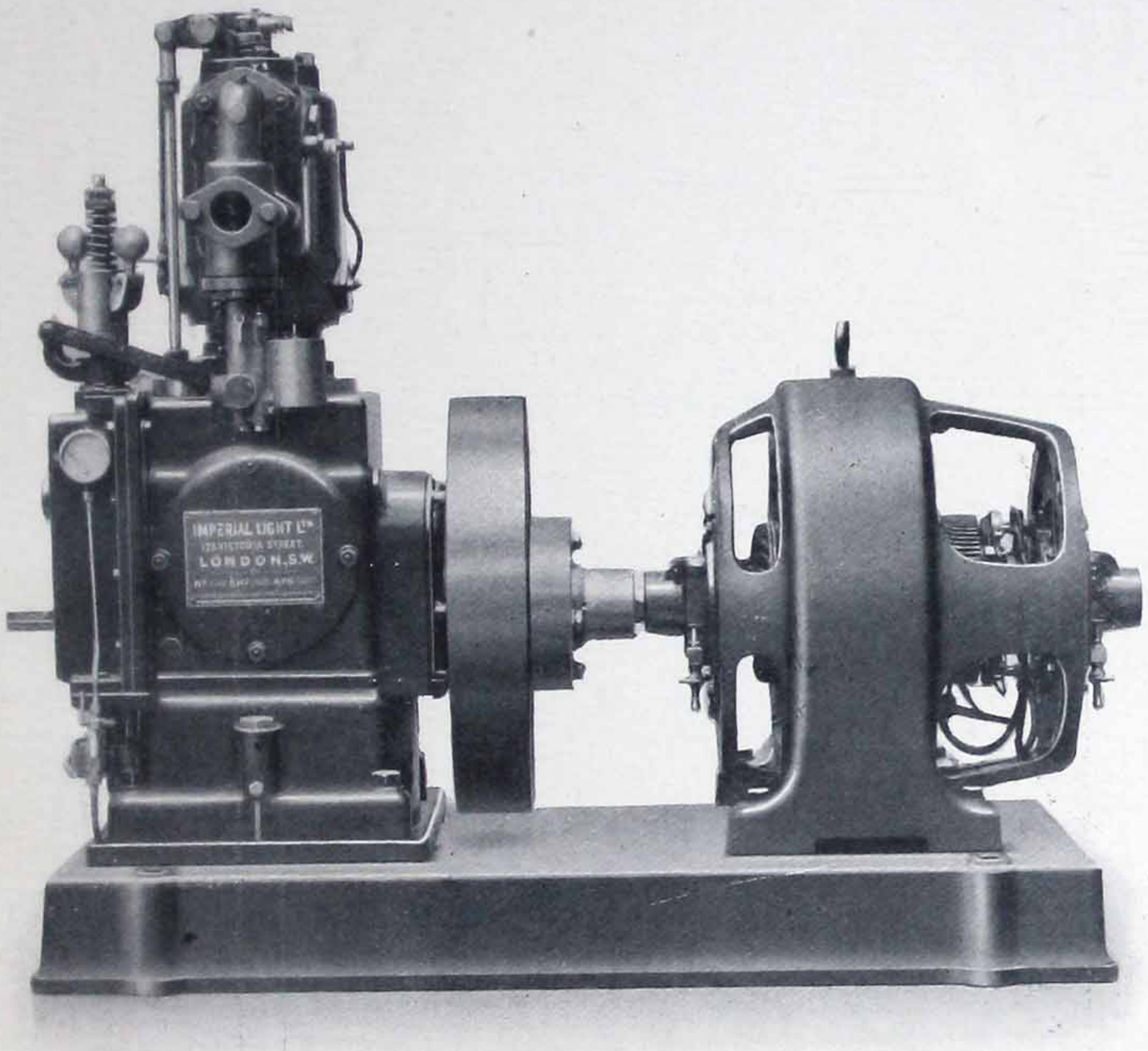
The following pages give illustrations and prices of Electrical Sets of various capacities suited to every requirement from the smallest cottage to that of the large country house.

Allen=Liversidge Ltd.

A=L "Imperial"

Direct Coupled Electrical Plants

For Country Houses, Churches, Schools, Etc.



5 B.H.P. MEDIUM SPEED ENGINE
direct coupled to 2½ Kilowatt Generator.

The A=L "Imperial" Plants consist of an Improved Type of Vertical Oil Engine, as illustrated, manufactured in sizes ranging from 3 B.H.P. to 45 B.H.P. coupled direct to specially designed Electric Dynamo and mounted on one Combined Cast Iron Bed plate.

These plants are noted for—

- Simplicity and Reliability.
- Easy and immediate starting.
- Neatness and Compactness of design.
- Low running costs.
- Workmanship and durability.
- Accessibility to all working parts.
- High Tension Magneto Ignition.
- Paraffin Fuel.
- Medium Speed and perfect control.
- Patent Vapouriser giving uniform mixture.

Prices and Particulars of Standard Sizes.

TYPE	B.H.P Paraffin	K.W.'s.	VOLTS	R.P.M.	WEIGHT Nett	WEIGHT Gross	CUBIC FEET	PRICES	SHUNT REGULATOR	COOLING TANKS & PIPING
					Cwts.	Cwts.		£ £	£ s. d.	£ s. d.
A.L. 0	3	1½–2	50/70	1000	9	11	31	137—143	3 5 0	6 10 0
A.L. 1	5	2½–3	50/70	800	15	19	54	175—181	3 15 0	7 10 0
A.L. 2	7	4–4½	100/145	700	19	23	76	228—235	4 10 0	9 10 0
A.L. 3	11	5–6	100/145	650	30	35	96	295—301	5 10 0	11 0 0
A.L. 4	14	7–8	100/145	650	33	38	120	346—352	6 10 0	12 0 0
A.L. 5	20 (4 Cyl.)	10–12	100/145	800	38	45	112	437—450	7 10 0	24 0 0
A.L. 6	30 (4 Cyl.)	15–18	200/240	700	48	57	129	620—632	8 10 0	26 0 0
A.L. 7	45 (4 Cyl.)	20–25	200/240	650	67	76	169	840—852	9 10 0	42 0 0

Prices include Combination Bedplate, Flexible Coupling, Sensitive Centrifugal Governor actuating Throttle, Balanced Crankshaft, Forced Lubrication to Main Bearings, Crankpins, etc. Patent Automatic Vapouriser, Variable Rotary High-Tension Magneto Ignition, Two Division (Petrol Starting) Fuel Tank and Copper Supply Pipe, Heavy Disc Flywheel, Cast-Iron Exhaust Box, Starting Handle, and Set of Spanners.

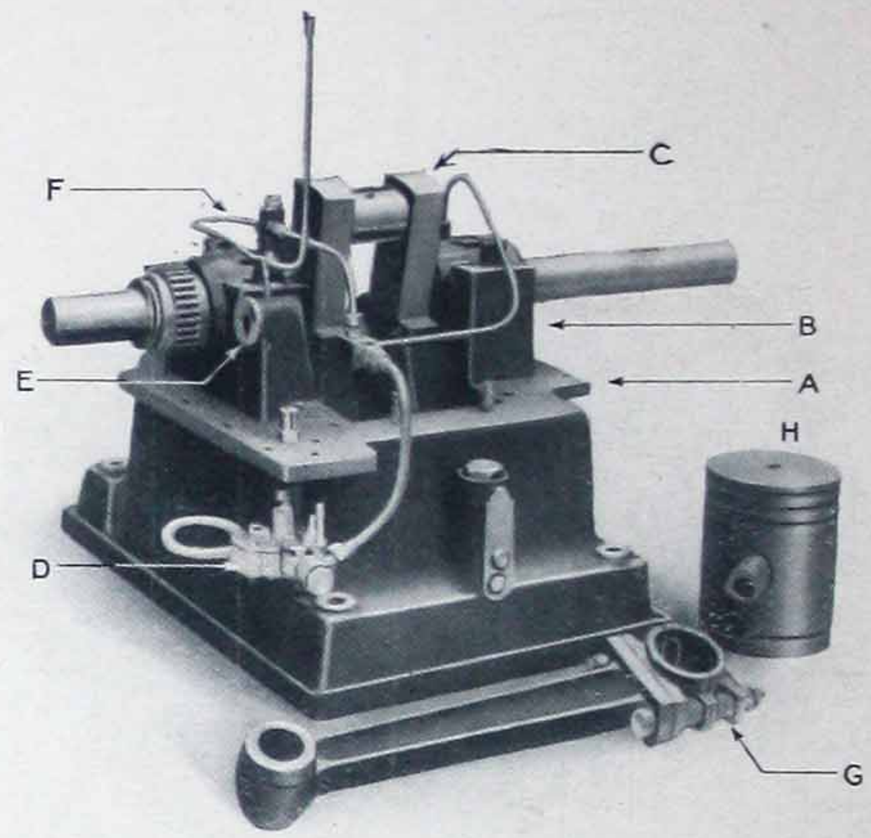
Allen=Liversidge Ltd.

A=L "Imperial" Engines

Constructional Features

All sizes of Engines are manufactured to one Standard Design, the distinctive features of which are clearly indicated, Figures 1 and 2.

Figure 1.



(**A**). Crankcase split well below centre line of Engine, enabling large Inspection Doors to be fitted, and giving free access to working parts.

(**B**). Adjustable Capped Main Bearings cast integral with lower half of crankcase, ensuring great rigidity and strength.

(**C**). Solid Forged Crankshaft fitted with Balance Weights and provided with Oil Retaining Device which makes metallic contact with Gear Guard and Flywheel End Cover, and ensures clean running.

(**D**). Self Priming Oil Pump fitted externally ; instant adjustment of pressure by means of Regulating Screw, which, when the pressure rises, by passes the oil to the suction side of pump.

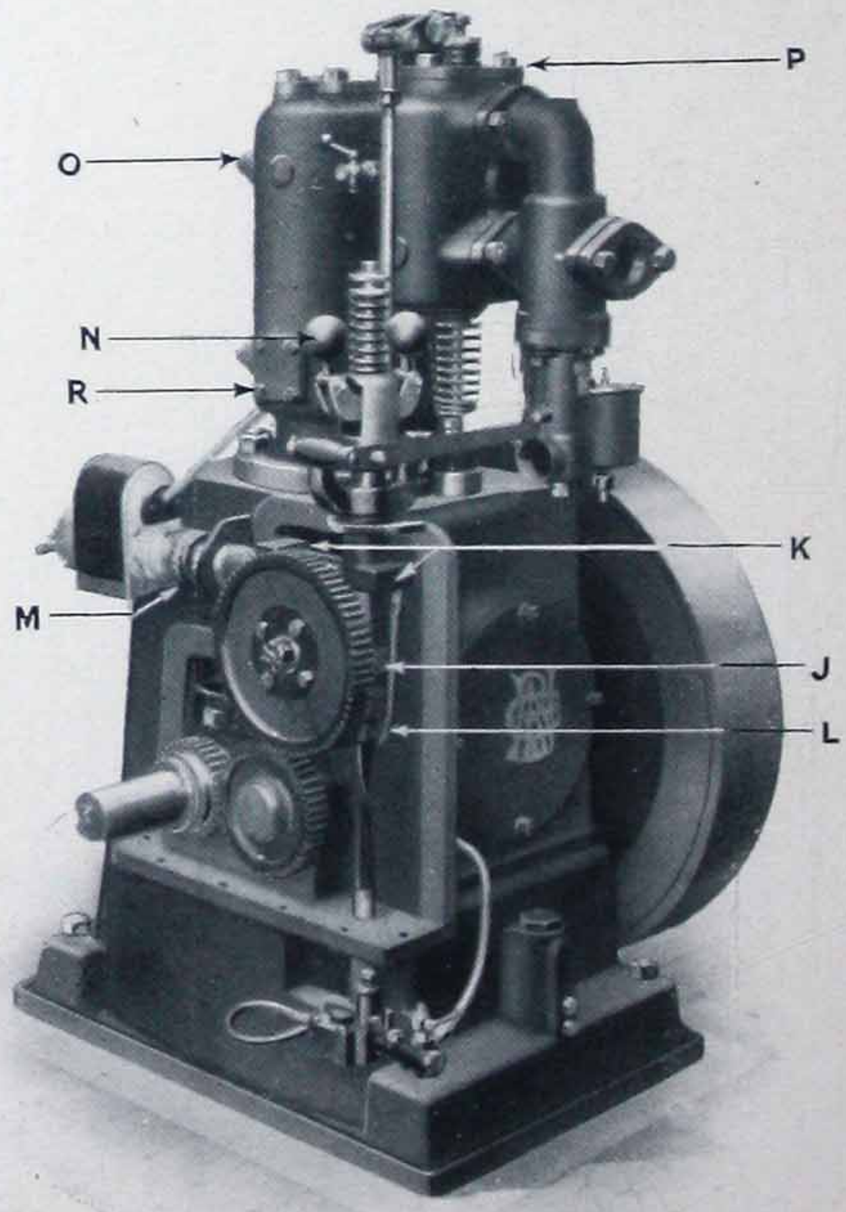
(**E**). Eccentric Bush Mounting for Intermediate Gear Spindle, ensuring accurate mesh of timing gears and silent working.

(**F**). Pressure Oil Feed Connections to Main Bearings, Intermediate Gear, etc.

(**G**). Marine Type Connecting Rod Brasses lined with special metal. Phosphor Bronze Gudgeon Pin Bush of extra large diameter.

(**H**). Piston accurately ground and fitted with three Compression Rings and Scraper Ring, Gudgeon Pin hardened and ground.

Figure 2.



(**J**). Magneto and Governor Spindles driven by silent Spiral Gears, Oil Pump driven by Flexible member from lower end of Governor Spindle.

(**K**). Brackets carrying Magneto and Governor Spindles cast integral with Camshaft Bearing, enabling whole of Camshaft Magneto and Governor assembly to be easily withdrawn from Gear Crankcase.

(**L**). Oil Pressure Feed Pipe to Governor and Magneto Spindle Bearings.

(**M**). Patent Flexible Vernier Magneto Coupling, enabling Magneto to be instantly retimed to 1/380 part of a revolution.

(**N**). Sensitive Centrifugal Governor, adjustable for any desired engine speed by varying tension on Governor Spring by the means of Knurled Nuts.

(**O**). Detachable Cylinder Cleaning Plug with ground Metal to Metal Seating.

(**P**). Detachable Inlet Valve Casing with ground Metal to Metal Seating.

(**R**). Detachable Flanges for removal of sediment in Water Jacket.

Allen=Liversidge Ltd.

A=L "Imperial" Engines

General Specifications

Bedplates are carefully proportioned, well ribbed to withstand all stresses, and are accurately machined to receive engines and dynamos, pumps, etc.

Crank Cases are of exceptional rigidity and strength, and are dust-proof. They are provided with large inspection doors, giving free access to all working parts. An oil-trough is cast round the base, which prevents any stray oil reaching the foundations.

Cylinders are of close grained cast-iron, the water space is liberally proportioned, and all parts of the jacket can be got at to remove any sediment which may collect. The cylinders are secured direct to the crank cases with substantial flanges.

Pistons are of special hard metal of ample length, giving a maximum of wearing surface, and are fitted with four compression rings. The method of securing the Piston Pin, which is of large diameter, hardened and ground, effectively prevents any possibility of trouble arising through the pin becoming loose.

Inlet and Exhaust Valves are of nickel steel, and are arranged at the side of the head, the inlet valve being above the exhaust valve. They are easy of access, and can be withdrawn for re-grinding in a few minutes. Adjustment for wear is provided in the operating rods.

Crank Shafts are cut out and machined all over from solid steel forgings, and are not bent or subjected to strain in the course of manufacture. The cranks on the single cylinder engines are fitted with balance weights to eliminate vibration.

Connecting Rods are of " H " Section. The big end brasses are of marine type, and are of special metal, and adjustable for wear. The small end is solid and is fitted with a phosphor bronze bush of large diameter.

Main Bearings are cast in the bottom half of the crank case, and after the caps have been spigoted in position they are accurately bored to receive the Gun Metal Brasses which are carefully scraped and bedded to the crank-shafts. The brasses are of exceptionally large wearing surface, and provision is made for adjustment.

Flywheels are extra heavy, and are of the solid disc type. They are turned all over, and polished on face and edges.

Ignition is effected by means of Variable Rotary High-Tension Magneto, enabling the best results to be obtained at all speeds. The drive to the Magneto is by spiral gear, and the position of firing can be instantly set by simply slacking one screw on the internal member of the small clutch keyed on the magneto spindle. On the larger sizes of Four-Cylinder Engines we fit Dual Ignition (Lodge System). This can also be fitted to the smaller engines at extra cost.

Governing. A powerful and sensitive vertical Governor driven by spiral gear is fitted, which, acting on the throttle ensures perfect steadiness, adjusting itself automatically in exact proportion to the work done. The speed can be regulated over a wide range by means of the knarled nuts controlling the tension of the spring. The increase of speed from full load to no load, and *vice versa*, is approximately 4%.

Lubrication. All Main Bearings, Crank Pins, Governor and Magneto Spindles are fitted with forced lubrication, which ensures perfect lubrication under all conditions. The pressure of the oil can be regulated, and is always under observation by means of the gauge. The Pistons and Camshafts are lubricated by oil flung by the rods which dip every revolution in troughs cast in the base of the crank case.

Vapourisers are our own patented design, are automatic in action, and give a uniform mixture at all speeds. A colourless and odourless exhaust is obtained running on paraffin, denoting perfect vapourisation and complete combustion, ensuring the utmost economy of fuel.

Couplings are of flexible type, ensuring ease of alignment and fit close up to the flywheel.

Camshafts are of large diameter, and the cams, which are of hard metal, are securely keyed in position and milled to form.

Tappets and Rollers are of hardened steel and are of ample width to minimise wear. The guides are of cast-iron, and are held in position by steel alloy clamp.

Starting. Sizes under 7 B.H.P. are easily started by relieving the compression by means of the compression cock on the cylinder. Above 7 B.H.P. a half-compression device is fitted, which eases the compression at starting.

Fuels. Standard Engines are all arranged to run on paraffin, but will work equally well on Petrol, Benzol, Alcohol, " Towns " and Suction Gas. Customers must always state on which fuel engines are required to run so that the necessary modifications can be made to ensure the most satisfactory results being obtained.

Fuel Supply is by gravity from a tank placed above the level of the vapouriser; this eliminates the necessity for fuel pumps with their attendant troubles, due to leakage of valves, etc.

Fuel Consumption. The consumption of the various fuels given below must be taken as approximate, as this varies with the load and the size of the engine. As a guide, the following may be taken as a fair average :—

Petrol and Petroleum	.....0.8 pint	per Brake Horse Power per hour.
Alcohol	.....1.5 pints	,, ,, ,, ,, ,,
Town's Gas	.....20 cubic feet	,, ,, ,, ,, ,,

Exhaust Silencer s provided, which silences the exhaust from the engine as much as possible.

Dynamos are of high-class manufacture, elegant design, and of large overload capacity. The temperature rise after six hours' run on full load does not exceed 70° Fahrenheit, which is the usual standard practice. Machines are shunt wound of the open protected type. Compound wound machines are supplied at a small extra cost.

Testing. All sets are thoroughly and carefully tested before dispatch, and more than their rated outputs are obtained to ensure their satisfactory running under all conditions.

Painting. All parts not finished bright are well rubbed down, painted several coats and varnished, giving a smooth and durable surface.

Guarantee. We undertake to replace, free of charge, any part which may prove defective through faulty material or workmanship, within twelve months after delivery, provided such parts are sent carriage paid to our works for inspection. No responsibility, however, is accepted for any damage caused by the negligence of others.

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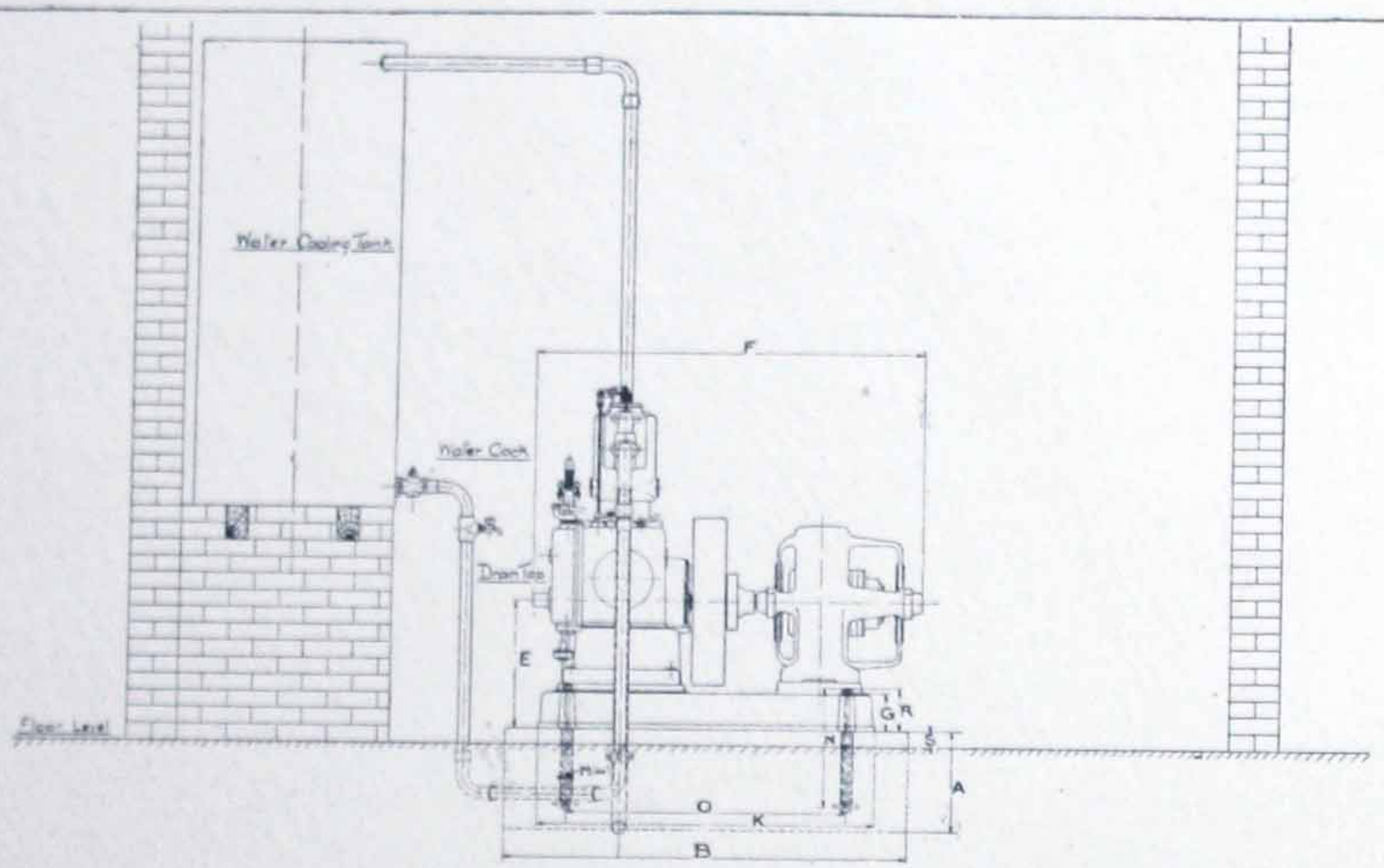
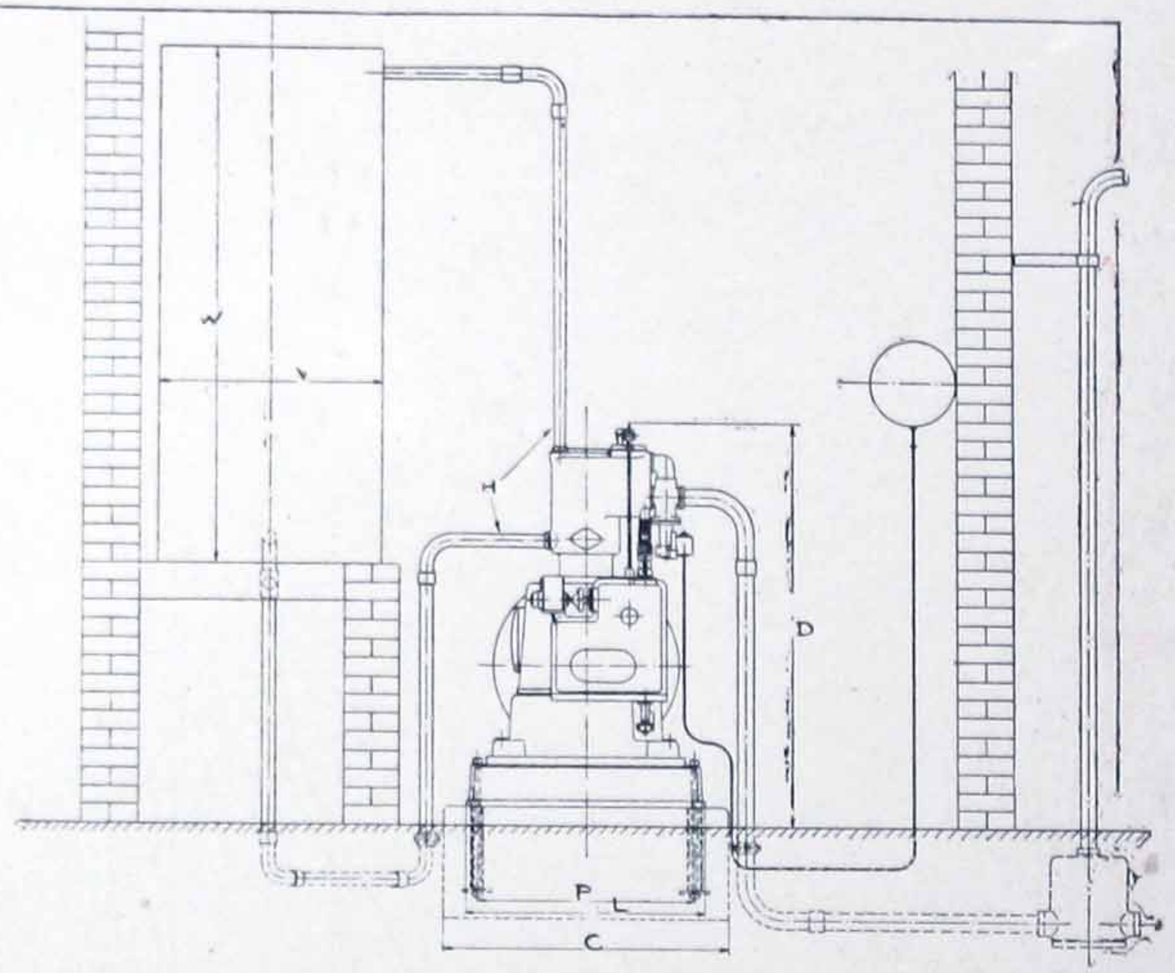
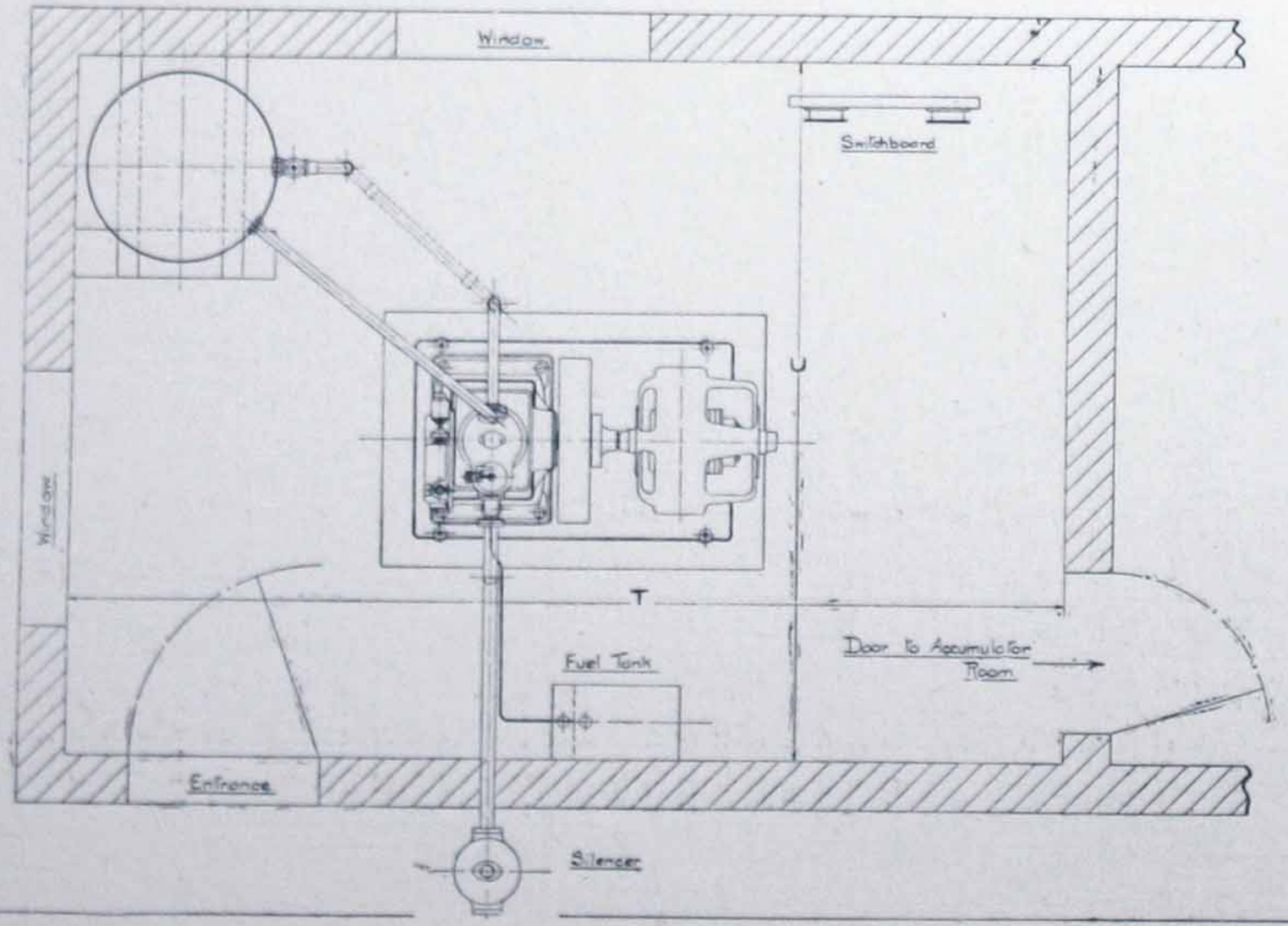






— *General Arrangement of Power House* —
for
— *A-L "Imperial" Electrical Installation.* —

Standard Dimensions.

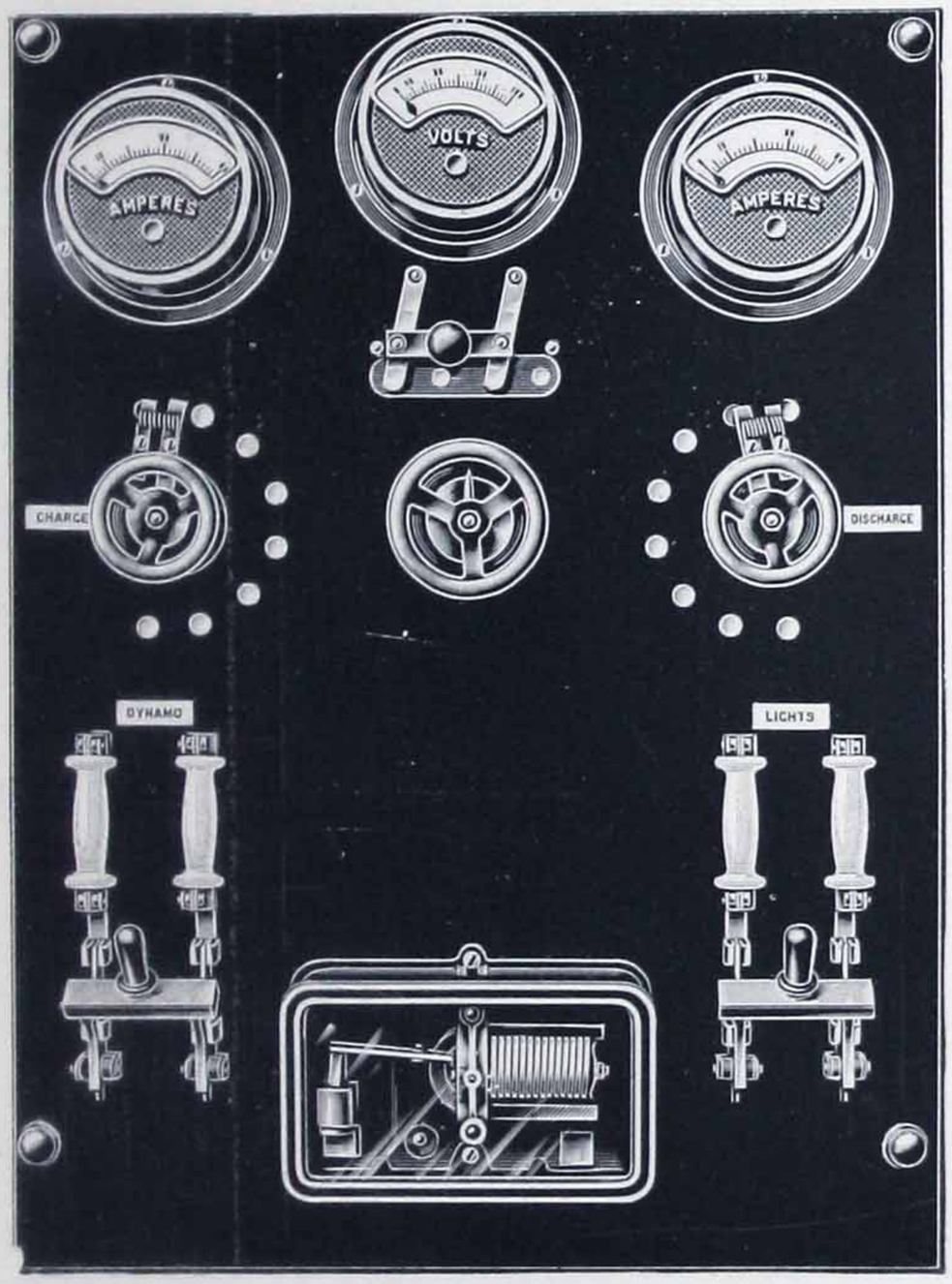
Type	BHP	KW	A	B	C	D	E	F	G	H	J	K	L	M	N	O	P	R	S	T	U	V	W
A0	3	1-1½	12"	50"	30"	36"	13½"	48"	4¼"	¾"	1¼"	41"	21"	¾"	14"	34"	21"	5¼"	2"	11-0	8-6	24"	54"
A1	5	2-3	15"	57"	36"	44"	15¾"	54"	5¼"	1"	1½"	48"	26"	¾"	16"	36"	24"	6¼"	2"	12-0	9-0	30"	60"
A2	7	3-4	18"	60"	39"	50"	18¼"	57"	5¾"	1"	1½"	51"	29"	¾"	19"	41"	27"	6¾"	2"	13-0	10-0	33"	66"
A3	11	5-6	21"	72"	47"	58"	21¾"	68"	6¼"	1¼"	2"	60"	34"	¾"	22"	50"	32"	7¼"	2"	15-0	11-0	39"	72"
A4	14	7-8	24"	81"	50"	63"	22¾"	72"	6¾"	1½"	2"	69"	38"	1"	26"	59"	35"	7¾"	2"	17-0	11-6	39"	84"

A=L "Imperial"

Switchboards

For Private Lighting Installations.

The A=L "Imperial" Switchboards are specially designed for Storage Battery work and embody all the necessary instruments, fuses and switches that are required for the ordinary Electric Lighting Installation.



General Specification :—

Solid Enamelled polished Slate Panel and Angle Iron Frame=work for supporting on floor or from wall. Fitted with the following instruments :—

- **2 Ammeters, Moving Coil Dead beat.**
- **1 Voltmeter, Moving Coil Dead beat.**
- **1 D.P. 2=way Voltmeter Switch.**
- **1 Charge and Discharge Cell Regulating Switch.**
- **1 Automatic Cut=in and Cut=out.**
- **1 D.P. Dynamo Switch with Porcelain Fuse.**
- **1 D.P. Lighting Switch with Porcelain Fuse.**
- **Engraved Ivorine Labels and necessary local back connections.**

Prices and Particulars.

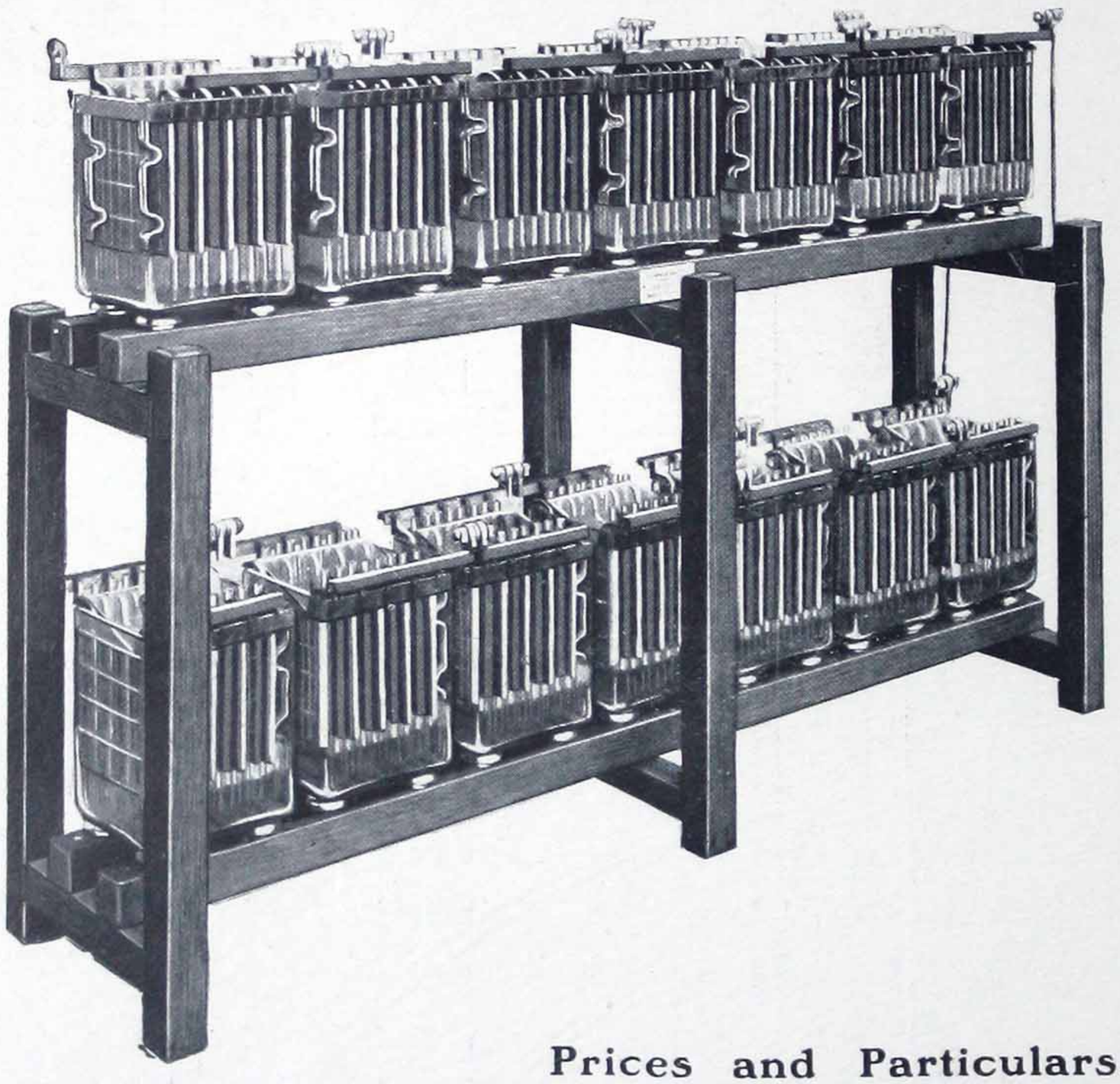
AMPERES	VOLTS	MAX. CELLS	METERS	SIZE OF PANEL	PRICE £	s.	d.
20	25	16	4″ dia.	2′0″×2′6″×1″	28	15	0
20	50	30	,,	,,	30	10	0
20	100	64	,,	,,	32	0	0
30	25	16	,,	,,	32	0	0
30	50	32	6″ dia.	2′6″×2′6″×1″	35	0	0
30	100	64	,,	,,	37	10	0
50	50	32	,,	,,	38	10	0
50	100	64	,,	,,	40	0	0

Allen=Liversidge Ltd.

A=L "Imperial"

Storage Batteries
For Lighting Installations

The A=L Imperial Storage Battery is constructed of the best possible material throughout, to stand rough usage. It is built of varying capacities and can be supplied suitable for any voltage. It is essentially the right type for private installations and general purposes.



General Specification :—

Batteries constructed of specially selected Glass Boxes, Patent Non=corrosive Terminals, Dilute Acid, Insulators and all accessories and wood Stands complete.

Prices and Particulars.

CAPACITY in Ampere Hours	No. OF PLATES	14 CELLS	27 CELLS	54 CELLS
		£ s. d.	£ s. d.	£ s. d.
60	5	30 0 0	58 0 0	110 0 0
90	7	37 0 0	69 0 0	130 0 0
120	9	49 0 0	85 0 0	165 0 0
180	7	56 0 0	105 0 0	200 0 0
240	9	69 0 0	130 0 0	250 0 0
300	11	87 0 0	164 0 0	320 0 0
360	13	105 0 0	196 0 0	390 0 0

Inclusive of necessary Wood Stands.
Prices and particulars of Larger Sizes on application.

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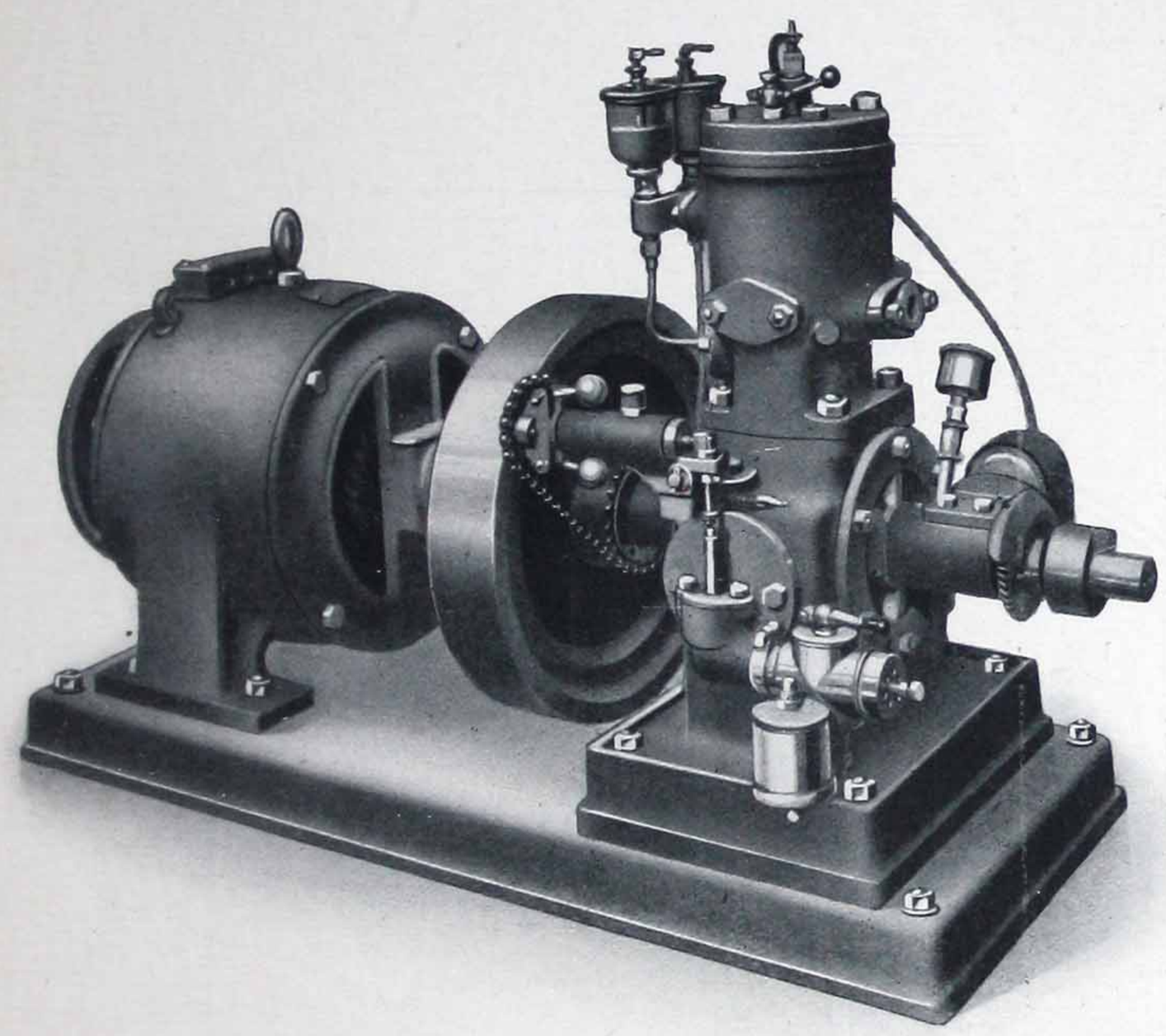
A=L "Imperial"

Generating Sets

For Small Country Houses, Bungalows, Etc.



The A=L "Imperial" Two=Stroke Electrical Sets for Small Country House Installations have gained a reputation equal to that of our larger 4=Cycle Plants on account of their Substantial Construction, Extreme Simplicity, Reliability in operation and Lasting Service. They are made in sizes suitable for 750 Watts and 1200 Watts, and are constructed to run on Petrol, Petrol=Paraffin, or Town's Gas.

Approx. Speed 900 R.P.M.

Two=Stroke Generating Set

Capacity 750 to 1,200 Watts.

Constructed to run on Petrol, Paraffin or Town's Gas.

Important Features of these Sets are :—

Positive System of Lubrication ; Gear-driven High-tension Magneto Ignition ; Sensitive Centrifugal Governor Controlling Throttle ; Water-cooled Cylinder with Detachable Head ; Piston, Cylinder, and Crank Shaft Ground to Fine Limits of Accuracy ; Moderate Speed ; Larger Bearing Surfaces ; Vibrationless Running.

Prices and Particulars.

TYPE	OUTPUT WATTS	VOLTS	No. of 16-C.P. 20-WATT LAMPS	WEIGHT		CUBIC FEET	PRICES
				Nett.	Gross		
				Cwts.	Cwts.		£ s. d.
No. 1	750	25/40	36	5	6	17	78 10 0
No. 2	1200	25/40	60	$5\frac{3}{4}$	$7\frac{1}{4}$	22	105 0 0

Dynamos of voltage 50/70, same price.

Engines are complete with Combination C.I. Bedplate, Sensitive Centrifugal Governor, High-Tension Magneto Ignition, Automatic Carburettor, Fuel Tank and Piping, Solid Disc Flywheel, Flexible Coupling, Exhaust Silencer, Water Cooling Tank and Piping, Starting Handle and Set of Spanners.

Allen=Liversidge Ltd.

A=L "Imperial"
Storage Batteries and Switchboards
For Small Electrical Sets.

Storage Batteries of 14 Cells for 25 Volt Installations.

TYPE	CAPACITY Amp. Hrs. 10-Hour rate	20-Watt Lamps for 5 hrs.	TOTAL LIGHTS of Installation	WEIGHT		CUBIC FEET	PRICE with Stands
				Nett	Gross		
				Cwts.	Cwts.		£ s. d.
No. 3	100	25	30 to 50	4	7	28	**37 0 0**
No. 4	150	36	50 to 70	6	11	50	**49 0 0**

Storage Batteries of 27 Cells for 50 Volt Installations.

TYPE	CAPACITY Amp. Hrs. 10-Hour rate	20-Watt Lamps for 5 hrs.	TOTAL LIGHTS of Installation	WEIGHT		CUBIC FEET	PRICE with Stands
				Nett	Gross		
				Cwts.	Cwts.		£ s. d.
No. 5	50	25	30 to 50	8	14	56	**52 0 0**
No. 6	75	36	50 to 70	12	22	100	**59 0 0**
No. 7	100	50	70 to 100	16	28	120	**71 0 0**

These Batteries are of the best British Manufacture and their capacity is such that the Generating Plant need only be run two or three times a week during the winter months.

If Half=Watt Lamps are fitted, the lighting capacity is double or the same number of Lamps can be illuminated for 10 hours.

Prices scheduled include Glass Boxes, Insulators, Lead Discs, Covers, Acid and Non=corrodible Bolt Connectors.

Battery Charging Switchboards.

A specially designed Switchboard is constructed for use with either of above plants. It is complete in every detail and consists of:—

1 Black Enamelled Slate Slab upon which are mounted:—

1 3=in. Dial Ammeter.
1 3=in. Dial Voltmeter.
1 2=way Voltmeter Switch.
1 Automatic Cut=in and Cut=out.
2 4=way Battery Regulating Switches.
1 Double Pole Switch with Fuses for Dynamo.
1 " " " " Lights.
All back connections and Cable Sockets, etc.
1 Suitable Shunt Regulator for Varying Dynamo Voltage.

Dimensions—18=in. long × 15=in. wide. Weight 28=lbs. Nett, 42=lbs. Gross. 3 Cubic Feet.

Price ... ... £21.

Complete Plant—750 Watt=Size, Engine, Dynamo, Battery and Switchboard ... £125
" 1250 " " " " " ... £175

Allen=Liversidge Ltd.

A=L "Imperial"

Electrical Installations

The following prices represent the total cost of Electrical Sets for installations of the various sizes specified. They are, of course, merely representative, and subject to modification according to individual requirements.

For 25/30 Lights

A=L "Imperial" Set, consists of:—

1–1½ B.H.P. "Imperial" Petrol/Paraffin Vertical Oil Engine, coupled direct to a ¾ K.W. Dynamo.
1 Standard Switchboard.
1 Standard Battery of 14 Cells, 80 ampere hour capacity.

Price: £125 0 0

For 30/50 Lights

A=L "Imperial" Set, consists of:—

1–2½ B.H.P. "Imperial" Petrol/Paraffin Vertical Oil Engine, with driving pulley and belt for Dynamo.
1–1¼ Kilowatt Shuntwound Dynamo, 50/70 Volts, with shunt Regulator
1 "Imperial" Standard Switchboard, with Ammeter, Voltmeters, etc.
1 Standard Battery of 27 cells, 90 ampere hours capacity.

Price: £179 0 0

For 50/70 Lights

A=L "Imperial" Set, consists of:—

1–3 B.H.P. "Imperial" Petrol/Paraffin Vertical Oil Engine, with Driving Pulley and belt for Dynamo.
1–1½ K.W. Shuntwound Dynamo, 50/70 Volts, with shunt Regulator.
1 "Imperial" Standard Switchboard with Ammeter, Voltmeters, etc.
1 Standard Battery of 27 Cells, 90 ampere hours capacity.

Price: £210 0 0

For 70/85 Lights

A=L "Imperial" Set, consists of:—

1–5 B.H.P. "Imperial" Petrol/Paraffin Vertical Oil Engine, with Driving Pulley and belt for Dynamo.
1–2½ K.W. Shuntwound Dynamo, 50/70 Volts, with shunt Regulator.
1 "Imperial" Standard Switchboard, with Ammeter, Voltmeters, etc.
1 Standard Battery of 27 Cells, 120 ampere hours capacity.

Price: £255 0 0

For 80/120 Lights

A=L "Imperial" Set, consists of:—

1–7 B.H.P. "Imperial" Petrol/Paraffin Vertical Oil Engine, with Driving Pulley and belt for Dynamo.
1–3½ K.W. Shuntwound Dynamo, 50/70 Volts, with shunt Regulator.
1 "Imperial" Standard Switchboard, with Ammeter, Voltmeters, etc.
1 Standard Battery of 27 Cells, 240 ampere hours capacity.

Price: £320 0 0

For 130/200 Lights

A=L "Imperial" Set, consists of:—

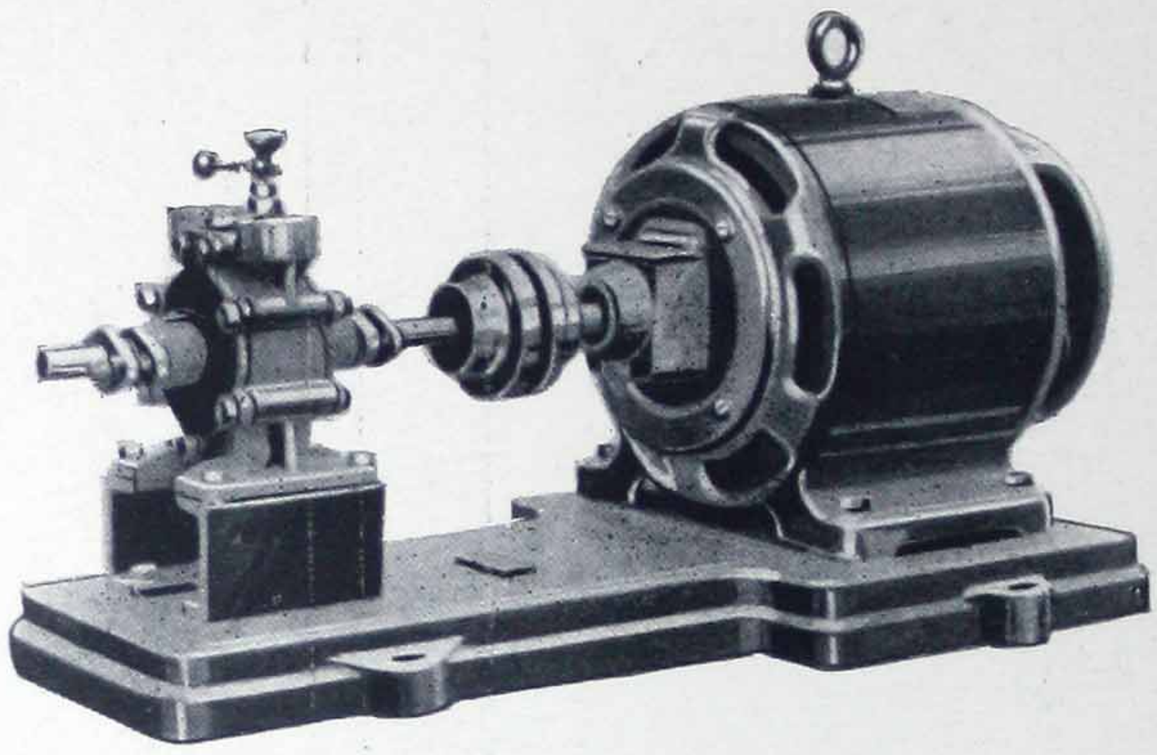
1–9 B.H.P. "Imperial" Petrol/Paraffin Vertical Oil Engine, with Driving Pulley and belt for Dynamo.
1–4½ K.W. Shuntwound Dynamo, 100/130 Volts, with shunt Regulator.
1 "Imperial" Standard Switchboard, with Ammeter, Voltmeters, etc.
1 Standard Battery of 54 Cells, 140 ampere hours capacity.

Price: £425 0 0

Allen=Liversidge Ltd.

A=L "Imperial"

Electrically Driven Positive Rotary Squeegee Pumps.



Small Country House Pumping Plant.

NOTE.—The above illustration shows one of our small Pumping Plants, a large number of which are at work for supplying water for country estates and residences. Some of these plants are drawing their water without priming from a depth of over 20 feet. As will be seen, a small high=speed motor is employed, thus eliminating the necessity of installing a large and inefficient low=speed motor, consuming unnecessary current.

Tbe "Squeegee" Pump may also be direct=coupled to a small petrol or paraffin engine, particulars of which will be found on page 15. Customers may supply their own motors if desired, and the price will be adjusted accordingly.

Prices of Standard Sets.

No. of Pump	Size of Opening	Max. head in feet	Normal Speed	Capacity G.P.H.	Net Wt.	Dimensions	PRICE WITH MOTOR	
							For head stated	For head stated
9	$\frac{3}{4}''$	75′	1000	300	250	36″×18″×12″	**£37** for 50′	**£40** for 75′
10	1″	75′	1000	650	295	36″×18″×12″	**£44** ,, 50′	**£47** ,, 75′
11	$1\frac{1}{4}''$	100′	900	900	330	42″×18″×18″	**£55** ,, 50′	**£61** ,, 100′
12	$1\frac{1}{2}''$	100′	850	1800	520	48″×22″×24″	**£75** ,, 50′	**£88** ,, 100′

Prices given are for Standard Voltages.

Prices for larger Installations upon application.

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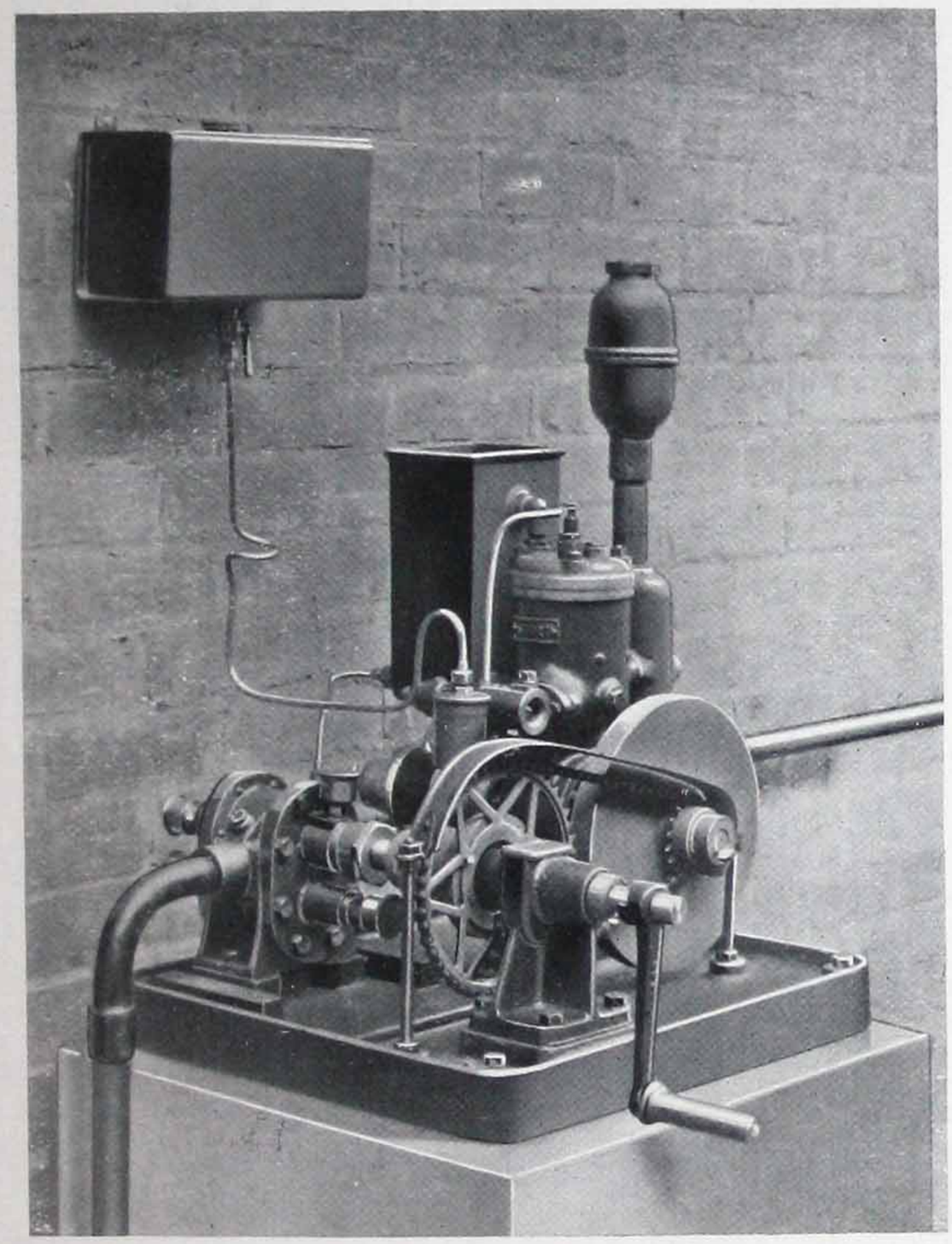
A=L "Imperial"

Small Pumping Plants

For Country House, Farm, Dairies, etc., etc.



Engine and Pump.

These Pumping Sets are specially constructed for use where no other power is available or in such cases where the water supply is situated at a distance, or for Farm supply, etc.

We shall be pleased to prepare estimates for complete Pumping Installations, including Plant, Piping Erection, etc., on receipt of particulars.

Prices:

A.L.P. 3 Set, as specification	£39 10 0
A.L.P. 4 Set, as specification, but with Pumps for 500 Gallons per Hour ...	£47 10 0
Heavy Wood Trolley on large wheels for use with above Sets	£8 10 0
Foot Valve for above Pump ...	£0 9 0

Larger Sets on application.

Specification.

The Engine. 1 B.H.P. Vertical Engine with magneto ignition and ball-bearing crankshaft. It is of the two-stroke three-port type and very economical in petrol consumption. The engine will run equally well on petrol, benzol or gas.
The Pump is of the rotary type constructed entirely of gunmetal and bronze. There are no valves and nothing to get out of order. Pipe connections $\frac{3}{4}$-in. gas.
Governors are not necessary except when the load is a varying one.
Drive. The engine drives the countershaft by means of a roller chain, a universal coupling connecting the countershaft to the pump. In this way all strain on the pump gland is avoided, greatly reducing the wear on this part. The starting handle is fitted to the countershaft giving a geared-up movement ensuring easy starting.
Cooling. The engine is cooled by water being by-passed from the pump. If desired a standard galvanised tank can be supplied at the same price. The former method is advantageous where frost may cause trouble, as the amount of water in the circulating system is only $\frac{1}{2}$-gallon.
Base. The whole plant is mounted on a cast iron base only 19-in. × 21-in , and can, if required, be fixed to a wood frame easily carried by two men, or on a four-wheeled trolley.
Lubrication. The engine by "petroil" system, $\frac{1}{2}$-pint of oil shaken up in a 2-gallon can of petrol or benzol; the countershaft by oil ring; the pump by grease cups.
Capacity. The pump will draw from 18 to 22 feet if a foot valve is fitted and all pipe joints are perfectly tight and will force up to 200 feet. The normal working load would be to force to 100 feet, in which case the quantity pumped would be about 300 gallons per hour.
Fuel Consumption. Eight to ten hours per gallon of fuel under normal load. We know of many plants working on lighter loads which run 14 hours to the gallon.
The Plant is complete in every detail, foundation and piping only are necessary to install.

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A=L "Imperial"

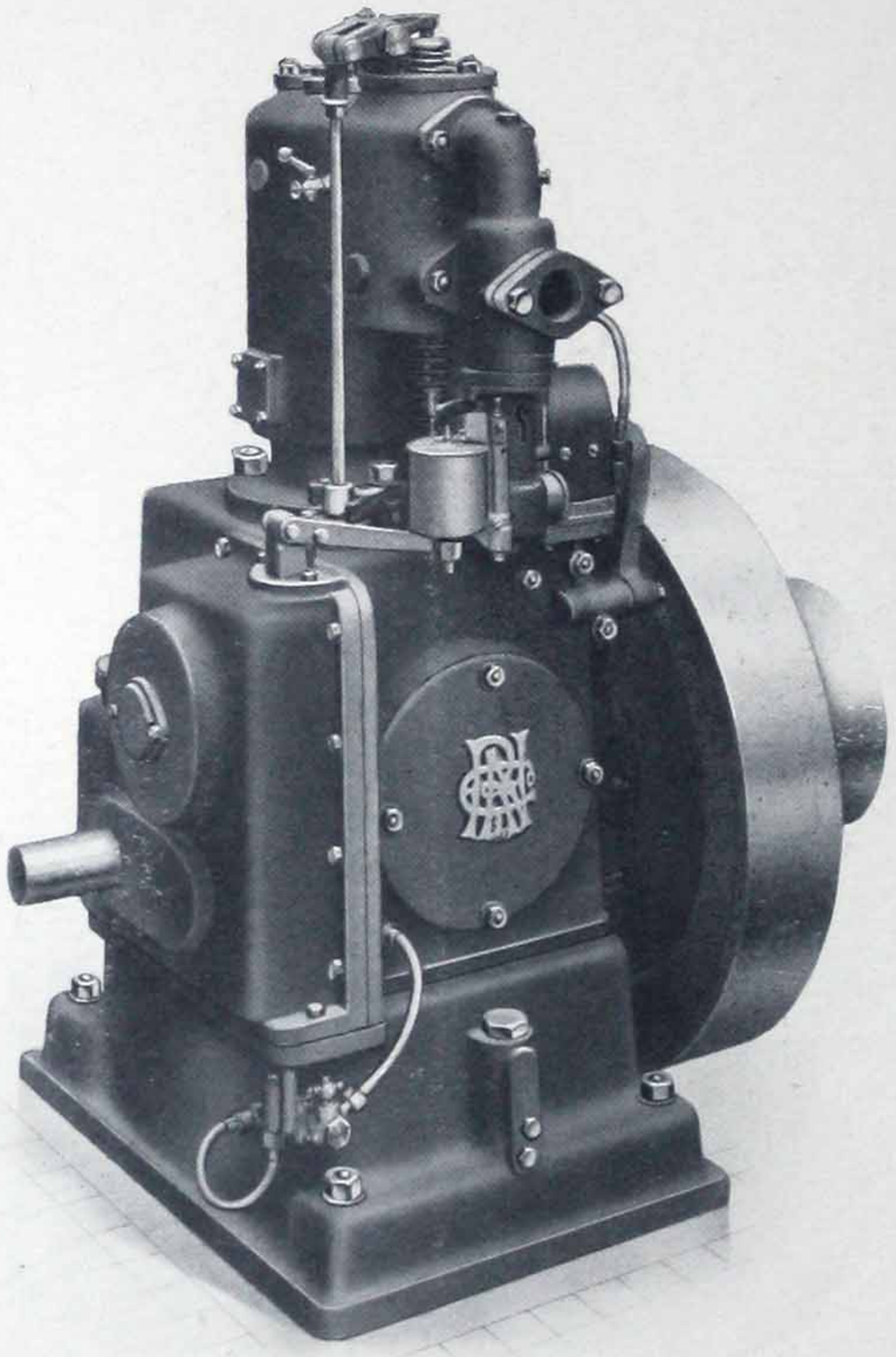
Industrial Engines

Oil, Petrol or Town's Gas Driven.

For Pumping, Chaff=Cutting, Grinding, Root Pulping, Sawing, Stone Crushing, Etc.
Made in Sizes from 5 B.H.P.

Modern

Design



Lasting

Service

7 B.H.P. Oil Engine.

The Ideal Power Unit.

Prices and Particulars of Stationary Industrial Engines.

B.H.P. PARAFFIN	REVOLUTIONS PER MIN.	PULLEY		WEIGHT		CUBIC FEET	PRICE
		Dia.	Face	Nett.	Gross		
		inches.	Inches	Cwts.	Cwts.		£ s. d.
5	700	8	6	$8\frac{1}{2}$	10	40	95 0 0
7	620	10	8	10	$11\frac{3}{4}$	44	130 0 0
9	500	12	10	14	$16\frac{1}{2}$	63	165 0 0
11	500	14	12	16	20	70	180 0 0

Engines are complete with High Tension Trip Magneto Ignition, Patent Automatic Vaporiser, Throttle Governor, Water Cooling Tank, Two-division Fuel Tank (Petrol Starting) and Copper Supply Pipe, Exhaust Box, Starting Handle and Set of Spanners.

Prices of larger sizes and for Portable Engines on application.

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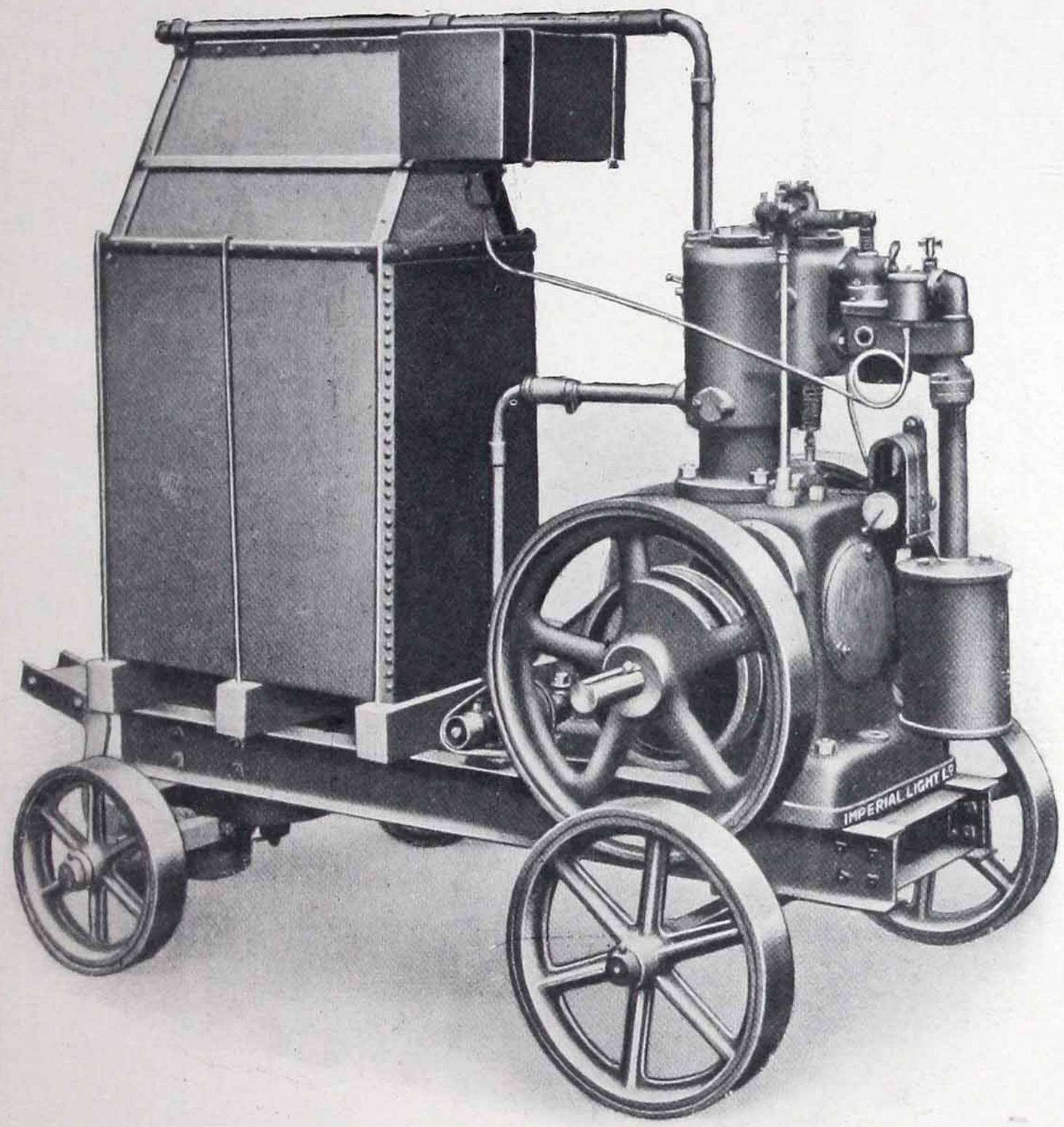
A=L "Imperial"

Industrial Engines

For Farm and General Use.



5 B.H.P. Engine on Steel Girder Truck.

These Engines are designed specially to meet all requirements in Farm and General work.

They incorporate all the essential features of success and are noted for their simplicity, solidity, and regularity in running.

Little or no expense is incurred in installing and any farm hand can manage these Engines after a few hours' tuition. They can be run practically any length of time without fear of stoppage or breakdown.

Engines are complete with High Tension Magneto Ignition, Carburettor or patented Vapouriser, Fuel Tank and Supply Pipe, Rivetted Water Tank and Circulation Pipes, Centrifugal Pump, Steel Girder Truck with Swivelling Undercarriage, Cast Iron Road Wheels and Drawbar.

Horse Shafts supplied at an extra cost.

Prices and Particulars of Portable Engines.

B.H.P. Petrol.	B.H P. Paraffin.	Speed R.P.M.	Weight. Net.	Weight. Gross.	Cubic Feet.	Price. Petrol, Paraffin.
			Cwt.	Cwt.		
5	4	700	16	21	105	£115
7	6	620	23	29	134	£155
9	8	500	31	38	183	£195
11	10	450	35	40	200	£215

Wood Skids extra.

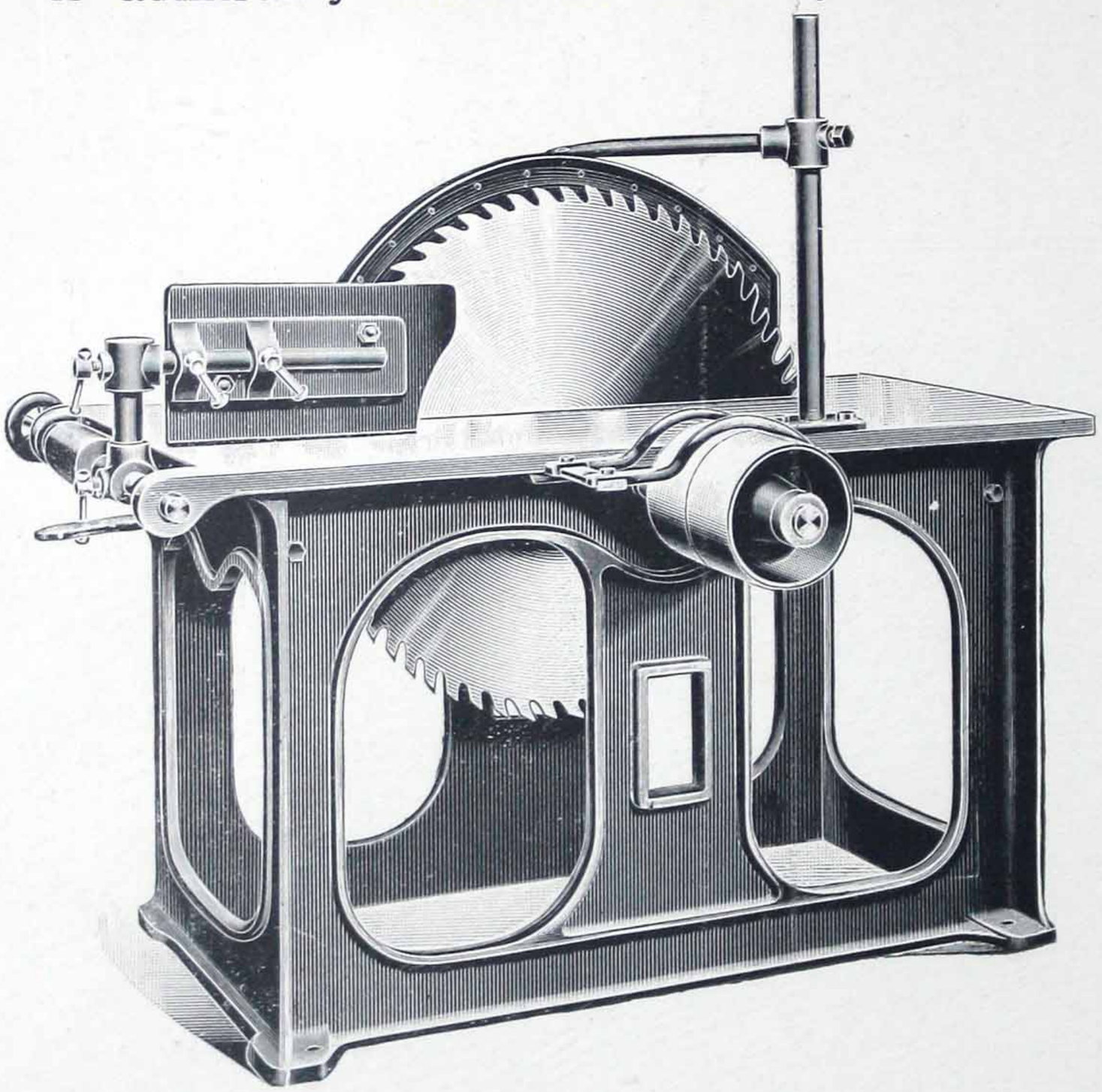
Allen=Liversidge Ltd.

A=L "Imperial"

Saw Benches

For Country House and Estate Work.

The "A=L Imperial" Saw Bench is specially constructed with massive Cast=iron Frame and plain smooth Cast=iron Table, and is admirably suited for Country House, Farm, or Estate Work.



Constructional Features:

Extra long Gun=metal Bear=ings, with Oil=retaining Bath.

Saw Spindle turned out of Solid Steel Bar.

Table secured to heavy Cast=iron Frame.

Adjustable Fence for Post, Rail and Plank Sawing.

Feed Roller for Heavy Work.

Note. — Price includes Saw, Fast and Loose Pulleys, Striking Gear, and Tilting Fence with fine Adjustment Screw on Bar.

These Saw Benches are specially adapted for use with our Industrial Engines where required.

Prices and Details.

No.	SIZE OF TABLE	DIA. OF SAW	CUT UP TO	PULLEYS	APPROX. SPEED	HORSE-POWER REQUIRED	APPROX. WEIGHT	PRICE	SAW GUARD
								£ s. d.	£ s. d.
1	50″×26″	24″	9″	7″×4″	800/1200	2½/4	6-cwt.	25 0 0	1 18 0
2	50″×26″	30″	12″	7″×4″	700/1100	5/6	6½-cwt.	28 0 0	2 5 0
3	60″×27″	36″	15″	7″×4½″	650/950	6/10	7½-cwt.	36 0 0	3 0 0
4	66″×27″	42″	18″	7″×4½″	600/800	10/12	8½-cwt.	45 0 0	3 18 0

Allen=Liversidge Ltd.

A=L "Imperial"

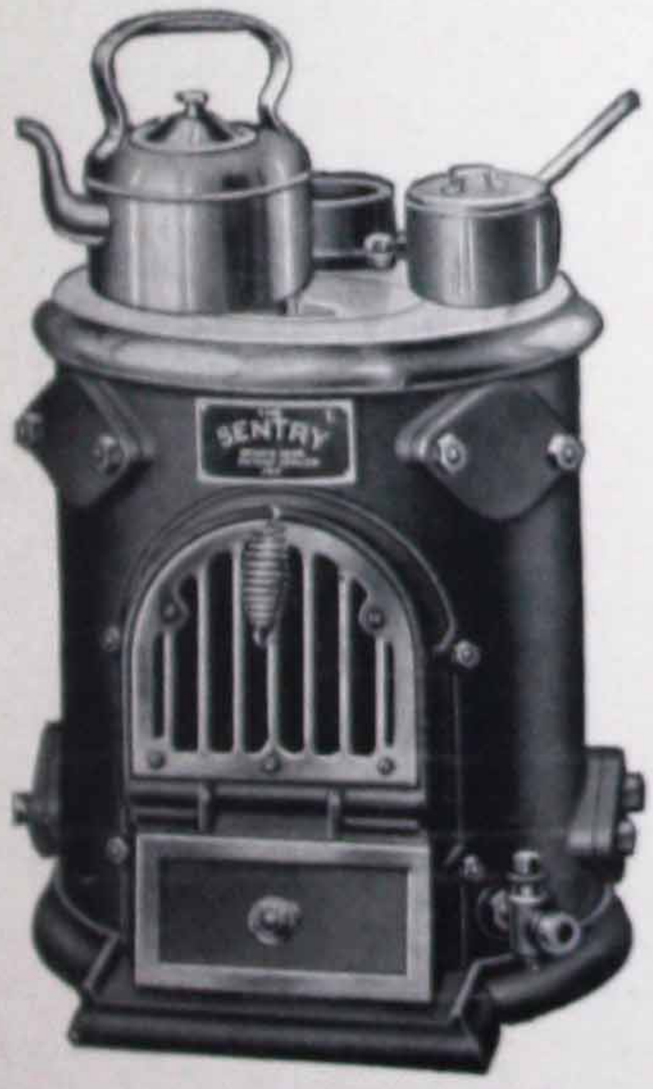
Heating and Domestic Hot Water Supply Installations.

Heating. The question of fuel consumption is a vital one for every householder at the present time, and, combined with the scarcity of domestic labour, it becomes necessary to look round for some means of effecting economy in both directions. The "A-L" system, which comprises a low-pressure Hot Water Apparatus and Radiators at places where required, provides warmth for rooms, staircases, corridors, etc., at approximately one-third the cost of open fires and with a minimum of dirt and labour.

It is not suggested that open fires should be dispensed with, but that they should be supplemented by Hot Water Radiators, which have proved most economical and satisfactory.

Domestic Hot Water Supply. The old-fashioned range back-boiler for providing hot water to bath and scullery is very wasteful in fuel, and, in many cases, is very unreliable. The installation of a small independent Domestic Boiler will save half the fuel and give hot water day and night. It is a very simple matter to install, and can easily be connected to existing service pipes.

The Company have a special Department dealing with Heating and Domestic Hot Water Supply Installation, and are always pleased to send an Engineer to give advice, and estimates free of cost, either in Town or Country.



"Sentry" Hot Water Boiler.

Prices from £13 10 0

The "Sentry" is designed for Domestic Hot Water Supply.

Special Features:

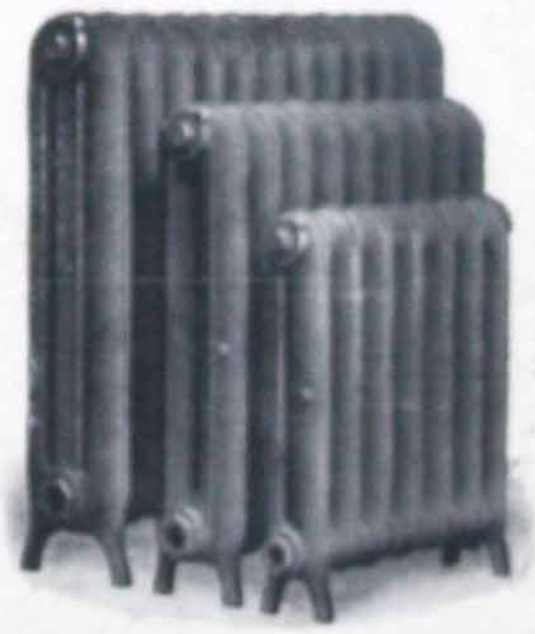
(1) Fire always visible.

(2) Open fire if required.

(3) Hot Plate for simple cooking operations.

(4) Four pipe connections for Radiators, Towel Rail, etc., if wanted.

Made in Five Sizes.



Boilers and Radiators suitable for all requirements.

Domestic Boiler and Radiators.

Allen=Liversidge Ltd.

C. & E. LAYTON
56, FARRINGDON STREET
LONDON, E.C. 4
2,000 4/23

Terms of Business:

1. All orders are accepted subject to satisfactory references.
2. All estimates are subject to acceptance within seven days, unless otherwise stated.
3. Prices given in this catalogue cancel all previous lists and are subject to alteration without notice.
4. The illustrations are made from photographs of actual Machines, but as minor improvements are made from time to time, we cannot adhere rigidly to details.
5. Cash on delivery of goods, or completion of contract, unless otherwise arranged in writing.
6. Goods are consigned carriage forward, unless quoted for carriage paid.
7. All goods should be examined before signing delivery sheet, or the sheet should be marked "unexamined."
8. Packing and cases charged at cost price. Value of cases allowed in full when returned in good condition, carriage paid.
9. Export orders: cash with order, or cash against Bills of Lading and satisfactory reference, unless otherwise arranged in writing.